WHAT IS CLAIMED IS:

1. An optical fiber containing a notch, wherein said notch is configured so as to direct radiation energy within the fiber toward a luminescent material.

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2. An optical luminescent display device, comprising:

a luminescent material; and

side emitting optical fiber means adapted for supplying radiant energy to said luminescent material.

3. An optical luminescent display device, adapted for use with a radiant energy source, comprising:

an optical fiber;

a luminescent material; and

a notch formed in said optical fiber adapted to direct a first type of radiant energy within said optical fiber toward said luminescent material.

4. An optical luminescent display device of claim 3, further comprising:

a reflective coating mounted on said optical fiber transversally opposite from said notch.

5. An optical luminescent display device of claim 3, wherein:

said luminescent material requires excitement from a first type of radiant energy to emit visible light.

6. An optical luminescent display device of claim 3, wherein:

said luminescent material requires excitement from a first type of radiant energy and a second type of radiant energy to emit visible light.

7. An optical luminescent display device of claim 6, wherein:

said luminescent material is a phosphor.

8. An optical luminescent display device of claim 6, further comprising:

a second optical fiber; and

a second notch formed in said second optical fiber adapted to direct said second type of radiant energy toward said luminescent material.

9. An optical luminescent display device of claim 8, further comprising:

a discharge lamp adapted to provide radiation to said luminescent material by transversally penetrating at least one of the group of said optical fiber and said second optical fiber;

wherein said discharge lamp is located external to said optical fiber and said second optical fiber.

10. An optical luminescent display device of claim 8, wherein:

said optical fiber and said second optical fiber are formed of plastic.

11. An optical luminescent display device of claim 8, wherein:

said optical fiber and said second optical fiber are formed of glass.

12. An optical luminescent display device of claim 8, wherein:

said notch and said second notch are filled.

13. An optical luminescent display device of claim 8, wherein:

said luminescent material is a phosphor.

14. An optical luminescent display device of claim 13, wherein:

said first type of radiant energy is UV light; and

said second type of radiant energy is IR light.

15. An optical luminescent display device of claim 14, wherein:

wavelengths of said first type of radiant energy and said second type of radiant energy can be adjusted to adjust the color of visible light emitted from said luminescent material.

16. An optical luminescent display device of claim 14, further comprising:

a dichroic filter formed between said luminescent material and said optical fiber.

17. An optical luminescent display device of claim 14, further comprising:

a mirror coating formed in said notch.

18. An optical luminescent display device of claim 14, wherein:

said luminescent material is a phosphor consisting essentially of EuSm.

19. An optical luminescent display device, comprising:

an optical fiber;

a luminescent material; and

means for deviating a path of radiation travelling within said optical fiber away from the axis of said optical fiber toward said luminescent material.

20. A method for causing a luminescent material to emit visible light, comprising:

an optical fiber;

a radiant energy source emitting radiant energy into said optical fiber; and

a luminescent material capable of emitting visible light when radiated by said radiant energy;

a notch formed in said optical fiber adapted to direct said radiant energy within said optical fiber toward said luminescent material.

21. An optical display panel, comprising:

a plurality of first optical fibers arranged to have common axial orientation;

a second optical fiber arranged so as not to be parallel to said plurality of first optical fibers;

a luminescent material located between said plurality of first optical fibers and said second optical fiber;

notches formed in said plurality of first optical fibers to provide side-emission of radiation directed toward said luminescent material; and

corresponding notches in said second optical fiber to provide side-emission of radiation directed toward said luminescent material.

22. An optical display panel of claim 21, wherein:

said luminescent material is formed as a plurality of individual pixels.

23. An optical display panel of claim 21, wherein:

said notches are formed on the outer side of said plurality of first optical fibers; and

said corresponding notches are formed on the outer side of said second optical fiber.

24. An optical display panel of claim 21, wherein:

said notches are formed on the inner side of said plurality of first optical fibers; and

said corresponding notches are formed on the inner side of said second optical fiber.

25. An optical display panel of claim 21, wherein:

said notches and said corresponding notches are filled.

26. An optical display panel of claim 21, wherein:

said luminescent material is located in said notches.

27. An optical display panel of claim 21, further comprising:

a reflective coating mounted on said optical fiber transversally opposite from said notches.

28. An optical display panel of claim 21, wherein:

said luminescent material requires excitement from a first type of radiant energy to emit visible light.

29. An optical display panel of claim 21, wherein:

said luminescent material requires excitement from a first type of radiant energy and a second type of radiant energy to emit visible light.

30. An optical display panel of claim 29, wherein:

said luminescent material is a phosphor.

31. An optical display panel of claim 30, wherein:

said first type of radiant energy is UV light; and

said second type of radiant energy is IR light.

32. An optical display panel of claim 31, wherein:

wavelengths of said first type of radiant energy and said second type of radiant energy can be adjusted to adjust the color of visible light emitted from said luminescent material.

33. An optical display panel of claim 31, further comprising:

a dichroic filter formed between said luminescent material and said optical fiber.

34. An optical display panel of claim 31, further comprising:

a mirror coating formed in said notch.

35. An optical display panel of claim 31, wherein:

said notches and said corresponding notches are filled.

36. An optical display panel of claim 31, wherein:

said luminescent material is a phosphor consisting essentially of EuSm.

37. An optical display panel of claim 21, further comprising:

a discharge lamp adapted to provide radiation to said luminescent material by transversally penetrating at least one of the group of said plurality of first optical fibers and said second optical fiber;

wherein said discharge lamp is located external to said plurality of first optical fibers and said second optical fiber.

38. An optical display panel of claim 21, wherein:

said plurality of first optical fibers and said second optical fiber are formed of plastic.

39. An optical display panel of claim 21, wherein:

said plurality of first optical fibers and said second optical fiber are formed of glass.

40. An optical display panel, comprising:

a plurality of first optical fibers arranged to have common axial orientation;

a second optical fiber arranged so as not to be parallel to said plurality of first optical fibers;

a luminescent material located between said plurality of first optical fibers and said second optical fiber;

means for deviating a path of radiation travelling within said plurality of first optical fibers away from the axis of each of said plurality of first optical fibers toward said luminescent material; and

means for deviating a path of radiation travelling within said second optical fiber away from the axis of said second optical fiber toward said luminescent material.

41. A method for operating an optical display panel, comprising:

a plurality of first optical fibers arranged to have common axial orientation;

a second optical fiber arranged so as not to be parallel to said plurality of first optical fibers;

a radiant energy source emitting a first radiant energy into one of said plurality of first optical fibers;

a radiant energy source emitting a second radiant energy into said second optical fiber; and

a luminescent material capable of emitting visible light when radiated by said first radiant energy and said second radiant energy;

notches formed in said plurality of first optical fibers to provide side-emission of radiation directed toward said luminescent material; and

corresponding notches in said second optical fiber to provide side-emission of radiation directed toward said luminescent material.

wherein said luminescent material is located between said plurality of first optical fibers and said second optical fiber.

42. A method for operating an optical display panel as in claim 41, further comprising:

matrix addressing means.

43. An optical switch, comprising:

an optical fiber;

a luminescent material;

a notch formed in said optical fiber adapted to direct a first type of radiant energy within said optical fiber toward said luminescent material; and

an optical pickup for optical communication with said luminescent material.

44. An optical switch, comprising:

an optical fiber;

a luminescent material requiring excitement from a first type of radiant energy and a second type of radiant energy to emit visible light;

a notch formed in said optical fiber adapted to direct a first type of radiant energy within said optical fiber toward said luminescent material; and

a laser diode able to radiate said luminescent material with a second type of radiant energy.

45. An optical switch as in claim 44, further comprising:

an optical pickup for optical communication with said luminescent material.

46. An optical switch as in claim 44, wherein:

said first type of radiant energy is UV light; and

said second type of radiant energy is IR light.

47. An optical switch as in claim 44, further comprising:

a second luminescent material requiring excitement from said first type of radiant energy and a third type of radiant energy to emit visible light;

a second notch formed in said optical fiber adapted to direct said first type of radiant energy within said optical fiber toward said second luminescent material; and

a second laser diode adapted to radiate said second luminescent material with a third type of radiant energy.

48. An optical switch as in claim 44, wherein:

said notch is filled.